

REMARKS/ARGUMENTS

Status of Claims

Claims 1-14, 19-24, 26 and 28-42 are pending. Claims 1, 8, 33 and 34 are currently amended. Claims 35-42 are new. Claims 15-18, 25 and 27 are cancelled. As demonstrated below, all of claims contain subject matter which is not disclosed, taught or made obvious by the cited art.

Drawings

The Applicants respectfully request the Examiner to accept the drawing, including the corrected drawings submitted on May 22, 2006.

Claims 30-33 – No disposition

The Applicants respectfully note that the Examiner has not provided a disposition for claims 30-33. If the Examiner does not allow in the application in the next action, the Applicants respectfully request that the Examiner make the next action non-final so that the Applicants have an opportunity to respond accordingly.

New Claims

Support for new claims 35-42 can be found in the specification on page 8, bottom – page 9, line 9.

Rejection of claim 33 under 35 USC § 112, first paragraph

The Examiner rejected claim 33, as failing to comply with the enablement requirement under 35 USC § 112, first paragraph. Accordingly, the Applicants amend claim 33 to reflect that the transfer of data string can be performed by a controller unit within the DMA. The Applicants respectfully request the Examiner to withdraw the rejection.

Rejection of claims 1, 2, 5, 7-9, 12 and 25 under 35 USC § 112, second paragraph

The Examiner rejected claims 1, 2, 5, 7-9, 12 and 25 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the Examiner maintains that the meaning of “the bit strings” ambiguous. Applicants respectfully traverse this rejection and maintain that a bit string is a

data structure comprising a string of bits upon which operations can be performed. Applicants claim a number of operations on bit strings, including: storing (claims 1 & 8), shifting (claims 1 & 8), transferring (claims 1 & 8), classifying (claims 5 & 12), rearranging (claims 5 & 12), and reading (claim 9). Data is read from a first storage medium and configured as a bit string for operation by the DMA, then transferred to a second storage medium. Applicants submit that there should be no ambiguity in this activity. However, Applicants previously amended claims 5 & 6 and 12 & 13 to point out that data is transferred to the second storage medium as a bit string. Applicants respectfully request that the rejection be withdrawn.

Objection to claims 25 and 27 under 37 CFR 1.75(c)

The Examiner objected to claims 25 and 27 as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants cancel claims 25 and 27.

Rejection of claims 1-4 and 8-11 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin

Amended claims 1 and 8 are not disclosed, taught or suggested by Tokumaru in view of Staplin. Specifically, Tokumaru merely discloses a direct memory access controller with selectors where the state of each selector is controlled by shifting signals. The data bits are transferred from the source memory through the selecting portion and shifted to the direction by any bytes based on a state obtained by the combination of shifting signals (col 3, line 40 – col 4, line 9). The Examiner expressly states that Tokumaru does not teach certain claimed features and relies on Staplin to make up for Tokumaru's deficiencies. Staplin merely discloses shift microcommands used to implement the software shift instructions of a CPU combined with the F-register decode to determine the shift type, direction and necessary filler bits (col 9, line 217-22). However, Staplin fails to make up for Tokumaru's deficiencies. Tokumaru and Staplin, in any combination, do not teach, disclose or suggest *determining whether a DMA activation status is set to active for the DMA to perform data transmission, and in the DMA medium, deciding a shift direction and a predetermined number of bits to be shifted in advance when a request is made so that data read from a first storage medium can be processed, if the DMA activation status is set to active*, as described in the amended claims 1 and 8.

The Applicants respectfully request the Examiner to withdraw the rejection of claims 1 and 8.

Claims 2-4 and 9-11 are allowable at least because they depend on an allowable base claim.

Rejection of claims 5-7 and 12-14 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin and further in view of Beukema

The Applicants traverse this rejection.

First, Claims 5-7 and 12-14 are allowable at least because they depend on an allowable base claim.

Next, for claims 5 and 12, the Examiner relies on Beukema to make up for Tokumaru and Staplin's shortcomings. Beukema merely discloses an independent control of DMA and I/O resources for Mixed-Endian computing systems. Specifically, Beukema discloses a reflection circuitry that is controlled by an external reflection bit whose source is dependent upon certain operations and an Endian control register to enable the Endian control array to be accessed (col 9, lines 41-60). However, Beukema fails to make up for Tokumaru and Staplin's deficiencies and in any combination does not disclose *classifying the bit strings configuring the read data into more significant bit strings and less significant bit strings; and rearranging positions of less and more significant bit strings and writing the bit strings configuring the read data to the second storage medium according to a result of the rearrangement.*

Claims 6-7 and 13-14 are also not disclosed by Beukema, at least because they are dependent on allowable claims.

The Applicants respectfully request the Examiner to withdraw the rejection of claim claims 5-7 and 12-14.

Rejection of claims 19, 20, 24 and 26 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin and further in view of Black

The Applicants respectfully traverse this rejection.

First, Claims 19, 20, 24 and 26 are allowable at least because they depend on an allowable base claim.

Next, for claim 19, the Examiner relies on Black to make up for Tokumaru and Staplin's shortcomings. Black merely discloses the principal of atomic actions, layered

network protocols allowing interaction between functionally paired layers in different locations without affecting other layers (see page 7). Black only discloses relationship of layers with peer entities at other computers or entities in adjacent layers in the same computer with an Open Systems Interconnection Model (OSI) (see page 9). Black does not disclose the features relating to a first and second layers as described in the claim, and fails to make up for Tokumaru and Staplin's deficiencies. Accordingly, claim 19 is allowable.

Claim 20 is allowable at least because it depends on allowable claims.

Claims 24 and 26 are allowable at least because they depend on allowable claims.

Rejection of claims 21-23 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin and Black and further in view of Lundsjo, Chuah, Hamalainen and Yi

The Applicants respectfully traverse this rejection.

First, claims 21-23 are allowable at least because of their dependency on allowable base claims.

Next, the Examiner states that Black does not teach the first layer being a radio link control layer and the second layer being a medium access control layer. To make up for the deficiencies of Black, the Examiner takes *official notice* to allege that a protocol stack of the type described in the claims is known in the art.

The rationale supporting an obviousness rejection may be based on common knowledge in the art or 'well-known' prior art. The Examiner may take official notice of facts outside of the record which are capable of instant and unquestionable demonstration of being 'well-known' in the art. See MPEP § 2144.03. However, the facts so noticed serve to 'fill the gaps' which might exist in the evidentiary showing and should not comprise the principal evidence upon which a rejection is based. See MPEP § 2144.03.

Accordingly, the Applicants traverse the rejections of claims 21-23, based on official notice and request references for disclosures for the teachings that the Examiner declares as well known in the art. The Examiner provides citations to references, but fails to show how these cited portions teach the claimed features.

In view of these remarks, if the Examiner does not intend to withdraw the rejections of the claims, Applicants request that the Examiner provide evidence in the next Office action regarding the requirements of the claims being known in the art. See MPEP § 2144.03.

If the Examiner declines to provide evidence, and if the Examiner wishes to maintain a rejection based upon personal knowledge regarding the requirements of the claims being known in the art, Applicants request that such knowledge be stated as specifically as possible in an affidavit, in accordance with MPEP § 2144.03.

Accordingly, Applicants respectfully request the withdrawal of the rejection of claims 21-23.

Rejection of claims 28 and 29 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin and further in view of Black

The Applicants respectfully traverse this rejection.

First, Claims 28 and 29 are allowable at least because they depend on an allowable base claim.

Next, for claim 28, the Examiner relies on Black to make up for Tokumaru and Staplin's shortcomings. Black merely discloses the principal of atomic actions, layered network protocols allowing interaction between functionally paired layers in different locations without affecting other layers (see page 7). Black only discloses relationship of layers with peer entities at other computers or entities in adjacent layers in the same computer with an Open Systems Interconnection Model (OSI) (see page 9). Black does not disclose the features relating to a first and second layers as described in the claim, and fails to make up for Tokumaru and Staplin's deficiencies. Accordingly, claim 28 is allowable.

Rejection of claims 30-32 under 35 USC § 103(a) as being unpatentable over Tokumaru in view of Staplin et al and Black (OSI – A Model for Computer Communications Standards) and what is old and well known in the art as evidenced by Lundsjo et al (US 6473442), Chuah (US 6400695), Hamalainen (US 6359904) and Yi (7054270)

The Applicants respectfully traverse this rejection. Claims 30-32 are allowable at least because they depend on an allowable base claim.

Rejection of claim 34

The Examiner rejects claim 34 along similar grounds as in claims 1 and 19-27. Accordingly, The Applicant traverses claim 34 along similar remarks as for claims 1 and 19-27 (please see remarks for claims 1 and 19-27 for details, above).

Conclusion

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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